

use, *Additional Labs*, and *Published Labs*. *Course* provides detailed descriptions of several labs and exercises used by the University of Virginia, including a multi-week exercise that explores antibiotic resistance in *E. coli*. Another exercise explores reproductive isolation between lineages of the *Phytophthora* organism that causes potato blight. Other exercises include using “lonely hearts” personal ads to evaluate mating preferences and sexual selection in humans, using a computer simulation called *Populus* that can be downloaded to demonstrate genetic drift, and exploring inheritance of traits using eyespots on the butterfly species *Precis coenia* (users must have a sample of the wings to perform this exercise). A comprehensive lab introduces students to phylogenetic trees and provides several related exercises. Each lab has detailed student background information, instructor directions, hints, and printable PDF student forms.

*Additional Labs* provides numerous laboratory exercises, broken down by length (multi-week labs, three-hour labs, one-hour labs, and field exercises). After selecting a lab length, the user selects among lab categories, including organisms, labs using models, and labs using existing data. Each of these provides a wealth of lab materials, with links to other Web pages from various universities and organizations. Evolutionary concepts covered include phylogenetics, artificial and natural selection, predator/prey interactions, habitat selection, Hardy-Weinberg population genetics, and genetic drift, among others. Several organisms are used to demonstrate evolutionary concepts, including Wisconsin Fast Plants®, clover, bacteria, butterflies, *C. elegans*, *Drosophila*, and various birds. All labs were well-explained and supported, and included teacher instructions, student handouts, and background information.

*Published Labs* was sorted into categories that included behavioral and evolutionary ecology, population genetics, phylogenetics, and selection. A variety of publications were listed,

ranging from educational journals to scientific journals. Each listing had a link that led to either a document in PDF format or to a Web site.

This Web site was a valuable source of material for teaching difficult concepts in evolutionary biology. The variety of lab exercises was exceptional, and the support material for teachers was detailed. Students completing some of the suggested labs should have a deeper understanding of the evolutionary process.

Cyndie Beale  
West Valley High School  
Fairbanks, Alaska 99709

## LAB CLEAR- INGHOUSE

**The Biology Lab Clearinghouse.**  
<http://blc.biolog.udel.edu>

This Web site allows biology faculty access to free educational materials for the biology laboratory. Materials range from methods to fully-developed lab investigations for high school, two-year colleges, and four-year colleges. The activities include pre-planned and open-ended investigations, and use all levels of technology, a variety of organisms, lab and field activities, and qualitative as well as quantitative investigations. The activities are indexed by student level, location (indoor or outdoor), type of organism used, area of biological application, and methodology.

A *Table of Contents* link provides a menu divided by area, sub-area, topic, and subtopic for various biological concepts. For example, the area of cells lists the sub-areas of energy, membranes, metabolism, reproduction, and structure. Instructors can then choose a topic and print a complete lab activity. Activities are provided in both PDF and RTF formats. The instructions are complete; they provide background information, recipes for reagents, worksheets for pre-lab preparation for students, student instructions, post-lab assessment questions, and extensions to the

activities. What is most impressive is the large number of subjects available at all levels of instruction. The site is easily navigated and well organized.

Most activities are geared for college students, but many are appropriate for advanced or intermediate high school biology programs. One benefit of the Web site is that it is continually updated by contribution of new lab activities, because users are encouraged to participate in building the site. It would be a worthwhile investment of time to browse this site for potential meaningful laboratory activities by both college and upper level high school instructors.

Carolyn Slygh  
Lake Worth High School  
Lake Worth, FL 33460

## DNA WORKSHOP

**A Science Odyssey: DNA Workshop.**  
<http://www.pbs.org/wgbh/aso/tryit/dna/index.html>

### Requirements:

- Macromedia Shockwave™

This PBS site has an interactive animation of DNA replication and protein synthesis. Students can manipulate nucleotides to perform these two processes while viewing a cell that points to where the processes are occurring. This site presents the information in simple, everyday language and includes a glossary. The activity is best suited for grades 7-9.

This Web site is a useful tool for practicing matching up nucleotides and distinguishing the fundamental differences between DNA replication and protein synthesis. A teacher may use this interactive Web site to allow students to manipulate the nucleotides themselves or as a visual aid during lectures on these topics. One pitfall of the site is that the activity may be too simple for some grade levels, and therefore would require the teacher to add details.

Rebecca Johns  
Troy High School  
Troy, Michigan 48098